Twelfth Census of the United States.

CENSUS BULLETIN.

No. 187. WASHINGTON, D. C. June 12, 1902.

AGRICULTURE.

NEVADA.

Hon. WILLIAM R. MERRIAM,
Director of the Census.

SIR: I have the honor to transmit herewith, for publication in bulletin form, the statistics of agriculture in the state of Nevada, taken in accordance with the provisions of section 7 of the act of March 3, 1899. This section requires that—

> The schedules relating to agriculture shall comprehend the following topics: Name of occupant of each farm, color of occupant, tenure, acreage, value of farm and improvements, acreage of different products, quantity and value of products, and number and value of live stock. All questions as to quantity and value of crops shall relate to the year ending December thirty-first next preceding the enumeration.

A "farm," as defined by the Twelfth Census, includes all the land, under one management, used for raising crops and pasturing live stock, with the wood lots, swamps, meadows, etc., connected therewith. It includes also the house in which the farmer resides, and all other buildings used by him in connection with his farming operations.

The farms of Nevada, June 1, 1900, numbered 2,184, and were valued at $15,615,710. Of this amount, $2,340,090, or 15.0 per cent, represents the value of buildings, and $13,275,620, or 85.0 per cent, the value of the land and improvements other than buildings. On the same date the value of farm implements and machinery was $888,560, and that of live stock, $12,169,565. These values, added to that of farms, give $28,673,835, the "total value of farm property."

The products derived from domestic animals, poultry, and bees, including animals sold and animals slaughtered on farms, are referred to in this bulletin as "animal products." The total value of such products, together with the value of all crops, is termed "total value of farm products." This value for 1899 was $6,758,337, of which amount $3,870,768, or 57.3 per cent, represents the value of animal products, and $2,887,569, or 42.7 per cent, the value of crops, including forest products cut or produced on farms. The total value of farm products for 1899 exceeds that for 1889 by $4,052,677, or 149.8 per cent. A part of this increase is doubtless due to a more detailed enumeration in 1900 than in 1890.

The "gross farm income," is obtained by deducting from the total value of farm products the value of the products fed to live stock on the farms of the producers. In 1899 the reported value of products fed was $1,573,170, leaving $5,185,167 as the gross farm income. The ratio which this latter amount bears to the "total value of farm property" is referred to as the "percentage of gross income upon investment." For Nevada in 1899 it was 18.1 per cent.

As no reports of expenditures for taxes, interest, insurance, feed for stock, and similar items have been obtained by any census, no statement of net farm income can be given.

Special reports as to the dimensions and cost of the leading irrigation ditches and canals, the area of land irrigated, methods for the artificial application of water to the growing crops, and other facts relating to irrigation, were obtained by correspondence with farmers, engineers, and others. This correspondence was under the joint direction of Mr. F. H. Newell, chief hydrographer of the Geological Survey, acting as expert special agent for the division of agriculture, and Mr. Clarence J. Blanchard.

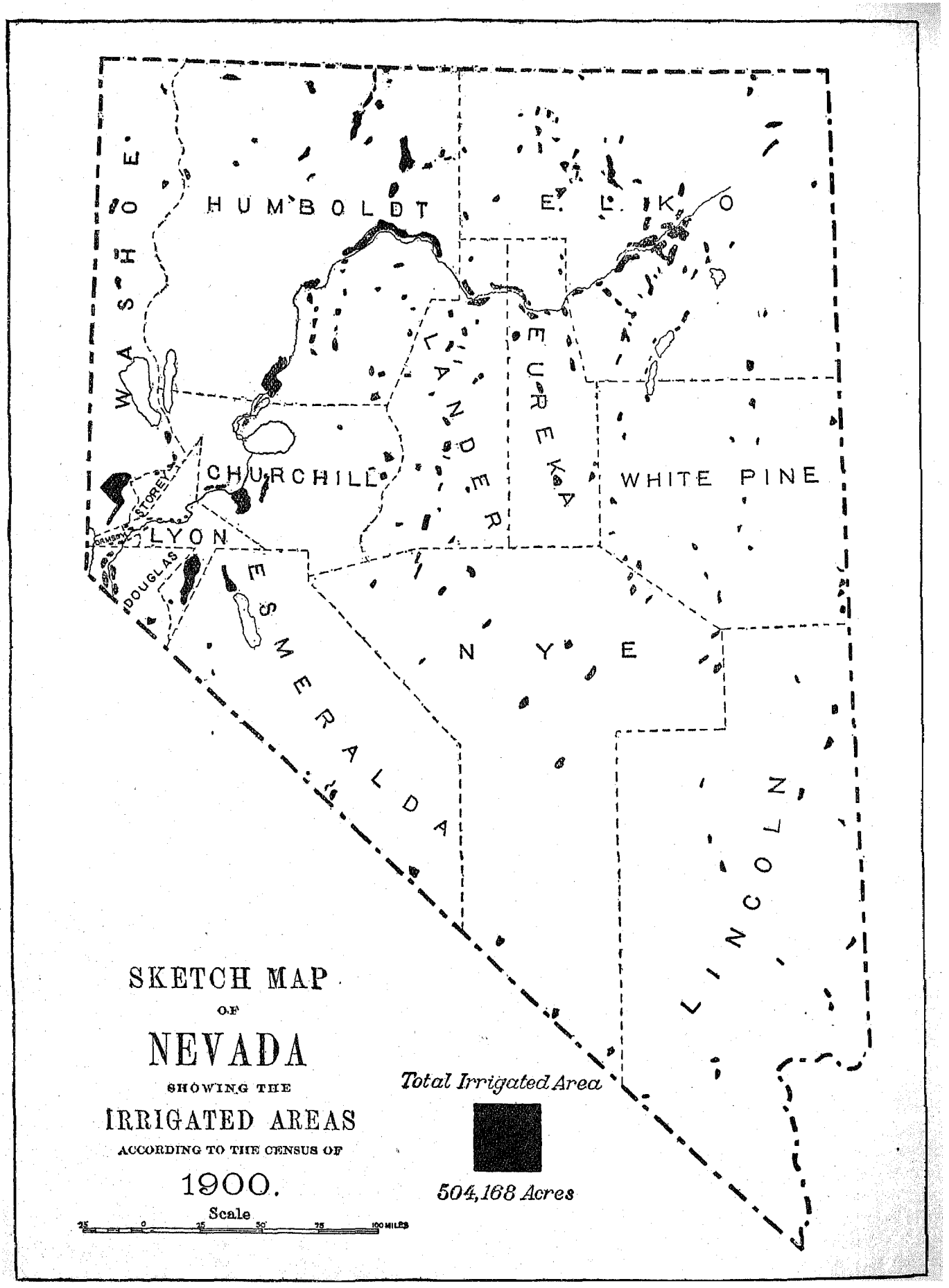
The statistics presented in this bulletin will be treated in greater detail in the report on agriculture in the United States. The present publication is designed to present a summarized advance statement for Nevada.

Very respectfully,

L. G. Powers.

Chief Statistician for Agriculture.

CP 15M


HUMBOLDT
E. L. KO
WASHOE
LANDER
EUREKA
CHURCHILL
WHITE PINE
STOREY
LYON
ORMSBY
DOUGLAS
ESMERALDA
NYE
LINCOLN
SKETCH MAP
OF
NEVADA
SHOWING THE
IRRIGATED AREAS
ACCORDING TO THE CENSUS OF
1900.
Scale
25 0 25 50 75 100 MILES
Total Irrigated Area
504,168 Acres

AGRICULTURE IN NEVADA.

GENERAL STATISTICS.

The total land area of Nevada is 109,740 square miles, or 70,233,600 acres, of which 2,565,647 acres, or 3.7 per cent, are included in farms.

The state is situated in the western portion of the Great Basin, and has a mean elevation of about 5,500 feet above sea level. It is traversed from north to south by numerous high parallel mountain ranges separated by valleys ranging in width from 5 to 25 miles, and having in some instances a length of 50 miles.

The principal rivers, the Humboldt, Carson, Truckee, and Walker, flow into lakes which have no outlets, and there are many smaller streams, which flow for a few miles and then disappear. Many of the small lakes evaporate completely during the summer. Throughout the state there is an abundance of springs, many of which are alkaline.

The atmosphere of the state is very dry—the mean annual rainfall being only 8.25 inches.

The soil in the valleys is very rich and needs only irrigation to render it highly productive. The pursuit of agriculture proper is, however, more or less subordinated in Nevada to stock raising, the relative importance of the live-stock industry of the state being shown by the fact that the animal products, together with the hay and forage and other products fed to live stock comprise 80.6 per cent of the total value of farm products.

NUMBER AND SIZE OF FARMS.

The following table gives, by decades since 1860, the number of farms, the total and average acreage, and the per cent of farm land improved.

TABLE 1.—FARMS AND FARM ACREAGE: 1860 TO 1900.

YEAR.	Number of farms.	NUMBER OF ACRES IN FARMS.				Per cent of farm land improved.
		Total.	Improved.	Unimproved.	Average.	
1900	2,184	2,565,647	572,946	1,992,701	1,174.7	22.3
1890	1,277	1,661,416	723,052	938,364	1,301.0	43.5
1880	1,404	530,862	344,423	186,439	378.1	64.9
1870	1,036	208,510	92,644	115,866	201.3	44.4
1860	91	56,118	14,132	41,986	616.7	25.2

While the population of Nevada was at its maximum in 1880, and has declined steadily since that date, there has been an increase in the number of farms for each decade, except 1880 to 1890, when a decrease of 9.0 per cent was shown. In the last decade the increase was 71.0 per cent. The total acreage, however, shows a continuous increase, the rate of gain for the last decade being 54.4 per cent. The average size of farms decreased in the decade, 1860 to 1870, but afterwards increased rapidly on account of the addition of large areas of grazing land from the public domain to the farm acreage. The decrease in the last decade indicates a division of farm holdings and a more intensive cultivation of the soil.

The decreases in the acreage and percentage of improved land shown for the last decade are probably due to the use of a more strict definition of the term "improved" by the Twelfth than by any previous census. The increased acreages in crops indicate that there has been little, if any, actual loss in improved area. This view is sustained by the fact that the decreases are reported from counties where hay, forage, and live stock are the principal products.

FARM PROPERTY AND PRODUCTS.

Table 2 presents a summary of the principal statistics relating to farm property and products for each census year, beginning with 1860.

TABLE 2.—VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND OF PRODUCTS: 1860 TO 1900.

YEAR.	Total value of farm property.	Land, improvements, and buildings.	Implements and machinery.	Live stock.	Farm products.[1]
1900	$28,673,335	$15,615,710	$838,560	$12,169,565	$6,758,337
1890	18,678,710	12,339,410	537,480	5,801,820	2,705,660
1880	9,186,852	5,408,325	378,788	3,399,749	2,855,449
1870[2]	8,094,672	1,485,505	163,718	1,445,449	[3] 1,659,713
1860	491,059	302,340	11,081	177,638	

[1] For year preceding that designated.
[2] Values for 1870 were reported in depreciated currency. To reduce to specie basis of other years they must be diminished one-fifth.
[3] Includes betterments and additions to live stock.

Since 1860 the total value of farm property has increased $28,182,776, and in the last decade $9,995,125, or 53.5 per cent. In the same decade the gain in value of farms was $3,276,300, or 26.6 per cent; in that of implements and machinery, $351,080, or 65.3 per cent; and in that of live stock, $6,367,745, or 109.8 per cent. The value of farm products for 1899 was $4,052,677, or 149.8 per cent greater than in 1889. A portion of this increase, and of that noted for implements and machinery, is doubtless the result of a more detailed enumeration in 1900 than heretofore. Among the items of farm products enumerated in 1900, but not in 1890, is the value of animals sold and animals slaughtered on farms, which for Nevada in 1899 amounted to $2,530,449, more than half the total gain.

COUNTY STATISTICS.

Table 3 presents the general agricultural statistics by counties.

TABLE 3.—NUMBER AND ACREAGE OF FARMS, AND VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, JUNE 1, 1900, WITH VALUE OF PRODUCTS OF 1899 NOT FED TO LIVE STOCK, AND EXPENDITURES IN 1899 FOR LABOR AND FERTILIZERS, BY COUNTIES.

COUNTIES.	NUMBER OF FARMS.		ACRES IN FARMS.		VALUES OF FARM PROPERTY.				Value of products not fed to live stock.	EXPENDITURES.	
	Total.	With buildings.	Total.	Improved.	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		Labor.	Fertilizers.
The State	2,184	2,063	2,565,647	572,946	$13,275,620	$2,340,090	$388,560	$12,169,565	$5,185,167	$1,386,650	
Churchill	77	76	56,491	30,188	412,800	73,400	33,770	492,416	220,772	39,490	
Douglas	117	117	68,151	27,069	912,050	248,250	55,990	255,745	259,477	85,570	
Elko	398	379	885,411	170,142	3,124,500	442,940	222,100	4,378,653	1,352,226	291,000	
Esmeralda	37	32	22,798	6,610	183,950	37,000	14,440	131,205	98,104	25,800	
Eureka	68	68	175,961	23,303	794,910	131,420	37,250	550,242	199,312	68,150	
Humboldt	241	232	649,452	139,143	2,766,180	278,090	149,680	2,684,804	938,595	325,230	
Lander	69	69	86,824	23,800	647,090	75,670	37,490	553,668	238,103	64,590	
Lincoln	229	201	37,531	13,094	409,850	95,890	36,280	262,019	182,788	49,680	
Lyon	168	164	99,666	33,958	917,450	163,960	59,240	365,380	348,407	98,780	
Nye	90	80	46,253	16,143	286,600	42,270	30,040	534,211	152,329	31,820	
Ormsby	50	48	8,433	2,357	130,480	52,620	15,500	27,396	54,818	13,660	
Storey	23	22	1,665	710	39,680	8,260	2,910	18,729	23,331	7,140	
Washoe	331	315	339,051	49,643	2,195,460	599,030	151,870	1,458,494	894,917	248,690	
White Pine	163	151	85,075	34,448	417,430	83,840	35,240	433,567	217,931	41,010	
Duck Valley[1]	27	27	2,690	1,227	11,480	2,420	2,820	9,646	1,852		
Pyramid Lake[1]	33	29	488	198	7,290	1,410	1,360	6,162	1,488	1,040	
Walker River[1]	63	53	1,707	913	18,470	3,620	2,580	7,228	5,767		

[1] Indian reservation.

In all counties except Nye, the number of farms has increased rapidly since 1890. Douglas, Lincoln, and Storey counties reported more than twice as many in 1900 as ten years before, and in Humboldt, Lyon, and Ormsby counties the gains were nearly as great. The farm acreage has increased in every county except White Pine, where it has decreased one-third; in Douglas, Lincoln, Lyon, and Storey counties it has more than doubled.

A lower value of land and buildings than in 1890 is reported for Esmeralda, Nye, and White counties. For the state the average value of farms in 1900 is $7,150, ranging from approximately $2,000 in Lincoln and Storey counties to more than $10,000 in Eureka, Humboldt, and Lander counties, the last three containing large live-stock farms.

All counties but White Pine show an increased value for implements and machinery. The largest relative gains were in Douglas, Storey, Ormsby, and Lincoln counties. The value of live stock for the state has more than doubled, Ormsby and White Pine counties alone showing decreases. The highest values per farm are reported from the two northern counties of Elko and Humboldt.

The average expenditure per farm for labor was $634.91, and varied from less than $300 in Lincoln, Ormsby, and White Pine counties to more than $900 in Eureka, Humboldt, and Lander counties. The highest averages are reported from counties containing large numbers of extensive stock ranges.

FARM TENURE.

Table 4 gives a comparative statement of farm tenure for 1880, 1890, and 1900. The farms operated by tenants are divided into two groups, designated as farms operated by "cash tenants" and by "share tenants." These groups comprise, respectively: (1) Farms operated by individuals who pay a rental in cash or a stated amount of labor or farm produce; (2) farms operated by individuals who pay as rental a stated share of the products.

In Table 5 farms of specified tenures are classified for 1900 according to race of farmer, and "farms operated by owners" are subdivided into four groups designated as farms operated by "owners," "part owners," "owners and tenants," and "managers." These groups comprise, respectively: (1) Farms operated by individuals who own all the land they cultivate; (2) farms operated by individuals who own a part of the land and rent the remainder from others; (3) farms operated under the joint direction and by the united labor of two or more individuals, one owning the farm or a part of it, and the other, or others, owning no part, but receiving for supervision or labor a share of the products; and (4) farms operated by individuals who receive for their supervision and other services a fixed salary from the owners.

TABLE 4.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES: 1880 TO 1900.

YEAR.	Total number of farms.	NUMBER OF FARMS OPERATED BY—			PER CENT OF FARMS OPERATED BY—		
		Owners.[1]	Cash tenants.	Share tenants.	Owners.[1]	Cash tenants.	Share tenants.
1900	2,184	1,935	162	87	88.6	7.4	4.0
1890	1,277	1,181	50	46	92.5	3.9	3.6
1880	1,404	1,268	63	73	90.3	4.5	5.2

[1] Including "part owners," "owners and tenants," and "managers."

TABLE 5.—NUMBER AND PER CENT OF FARMS OF SPECIFIED TENURES, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER.

PART 1.—NUMBER OF FARMS OF SPECIFIED TENURES.

RACE.	Total number of farms.	Owners.	Part owners.	Owners and tenants.	Managers.	Cash tenants.	Share tenants.
The State	2,184	1,649	143	17	126	162	87
White	2,011	1,489	143	17	125	151	86
Colored	173	160	----	----	1	11	1
Chinese	15	5	----	----	----	10	----
Indian	155	153	----	----	1	----	1
Negro	3	2	----	----	----	1	----

PART 2.—PER CENT OF FARMS OF SPECIFIED TENURES.

The State	100.0	75.5	6.5	0.8	5.8	7.4	4.0
White	100.0	74.0	7.1	0.9	6.2	7.5	4.3
Colored	100.0	92.5	(1)	(1)	0.6	6.3	0.6

[1] Less than one-tenth of 1 per cent.

Between 1890 and 1900 the number of farms operated by owners increased 754, or 63.8 per cent, while the total number of rented farms increased nearly threefold. Of the latter class, those operated by "cash tenants" have increased more rapidly, indicating a growing sentiment on the part of both landlord and tenant in favor of the cash-payment system, and greater independence and financial responsibility on the part of the tenant class.

FARMS CLASSIFIED BY RACE OF FARMER AND BY TENURE.

Tables 6 and 7 present the principal statistics for farms classified by race of farmer and by tenure.

TABLE 6.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY RACE OF FARMER AND BY TENURE, WITH PERCENTAGES.

RACE OF FARMER, AND TENURE.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	2,184	1,174.7	2,565,647	100.0	$28,673,835	100.0
White farmers	2,011	1,272.1	2,558,120	99.7	28,531,068	99.5
Negro farmers	3	535.0	1,605	0.1	40,719	0.1
Indian farmers	155	36.4	5,635	0.2	81,149	0.3
Chinese farmers	15	19.1	287	(1)	20,899	0.1
Owners	1,649	565.7	932,782	36.3	15,824,390	55.2
Part owners	143	3,638.5	520,304	20.3	2,759,013	9.6
Owners and tenants	17	498.9	8,397	0.3	122,512	0.4
Managers	126	7,954.8	1,002,307	39.1	8,094,953	28.2
Cash tenants	162	392.6	63,597	2.5	1,245,867	4.4
Share tenants	87	439.8	38,260	1.5	627,100	2.2

[1] Less than one-tenth of 1 per cent.

TABLE 7.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY RACE OF FARMER AND BY TENURE.

RACE OF FARMER, AND TENURE.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$6,079	$1,071	$407	$5,572	$2,374	18.1
White farmers	6,565	1,158	437	6,028	2,567	18.1
Negro farmers	8,183	817	105	4,468	411	3.0
Indian farmers	255	40	50	179	62	11.9
Chinese farmers	670	137	118	469	813	58.4
Owners	4,429	950	340	3,877	1,848	19.3
Part owners	9,153	1,283	555	8,303	4,068	21.1
Owners and tenants	3,161	722	485	2,839	1,513	21.0
Managers	28,199	2,889	1,294	31,864	9,130	14.2
Cash tenants	4,288	852	302	2,249	1,653	21.5
Share tenants	4,165	865	331	1,847	1,294	18.0

Of the farms of the state, 92.1 per cent are operated by white farmers, and 7.9 per cent by colored farmers, nine-tenths of whom are Indians. The high percentage of gross income for Chinese farmers is due to the fact that the farms operated by them are nearly all intensively cultivated vegetable farms. The farms of managers show the highest average value of products, but the percentage of gross income is smaller than for the other groups, because of the high average valuation of land, buildings, and live stock.

Farms operated by "managers" have the largest average area, 7,954.8 acres, and those operated by "cash tenants" the smallest, 392.6 acres. Of the 327 farms, each containing 1,000 acres or over, 173 are operated by "owners;" 67, by "managers;" 55, by "part owners;" 19, by "cash tenants;" 10, by "share tenants;" and 3, by "owners and tenants." Most of the farms of this group are live-stock farms.

FARMS CLASSIFIED BY AREA.

Tables 8 and 9 present the principal statistics for farms classified by area.

TABLE 8.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY AREA, WITH PERCENTAGES.

AREA.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	2,184	1,174.7	2,565,647	100.0	$28,673,835	100.0
Under 3 acres	60	0.7	44	(1)	312,921	1.1
3 to 9 acres	76	8.3	628	(1)	91,427	0.3
10 to 19 acres	99	13.2	1,304	0.1	159,782	0.6
20 to 49 acres	231	32.8	7,586	0.3	430,339	1.5
50 to 99 acres	217	73.8	16,013	0.6	760,945	2.7
100 to 174 acres	407	146.6	59,684	2.3	2,305,786	8.0
175 to 259 acres	174	216.5	37,665	1.5	1,290,431	4.5
260 to 499 acres	331	364.8	120,761	4.7	3,139,297	10.9
500 to 999 acres	262	687.0	179,984	7.0	3,504,760	12.2
1,000 acres and over	327	6,550.4	2,141,977	83.5	16,678,147	58.2

[1] Less than one-tenth of 1 per cent.

TABLE 9.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY AREA.

AREA.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$6,079	$1,071	$407	$5,572	$2,374	18.1
Under 3 acres	70	107	90	4,888	1,532	29.4
3 to 9 acres	512	348	60	283	304	25.3
10 to 19 acres	637	482	107	388	305	19.0
20 to 49 acres	882	294	122	615	383	20.6
50 to 99 acres	1,747	507	194	1,059	770	21.9
100 to 174 acres	3,149	721	246	1,519	1,086	19.2
175 to 259 acres	4,043	1,119	358	1,896	1,570	21.2
260 to 499 acres	4,529	1,127	388	3,440	2,054	21.7
500 to 999 acres	6,672	1,167	510	5,628	2,872	21.5
1,000 acres and over	22,525	2,785	1,142	24,552	8,064	15.8

The group of farms, each containing from 100 to 174 acres, comprises a greater part of the total number than any other, showing the frequency of quarter-section holdings, but the group, "1,000 acres and over," contains more than four-fifths of the total acreage, and over half of the value of farm property in the state.

In general the average values of the several classes of farm property and products increase with the size of the farms, while the gross incomes per acre bear an inverse ratio to the size of farms. The high average value of live stock, and large gross income shown for farms under 3 acres, are due to the fact that five-sixths of them are live-stock farms, whose operators use large areas of the public domain but actually own or lease less than 3 acres of land. Some of them are market gardens and city dairies, the gross incomes from which are relatively high, as they are determined not so much by the acreage of owned or rented land used, as by the capital invested in buildings, implements, and live stock, and by the amount expended for labor.

The average gross incomes per acre for the various groups classified by area are as follows: Farms under 3 acres, $2,089.77; 3 to 9 acres, $36.78; 10 to 19 acres, $23.23; 20 to 49 acres, $11.67; 50 to 99 acres, $10.43; 100 to 174 acres, $7.40; 175 to 259 acres, $7.25; 260 to 499 acres, $5.63; 500 to 1,000 acres, $4.18; 1,000 acres and over, $1.23.

FARMS CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

In Tables 10 and 11, the farms are classified by principal source of income. If the value of the hay and grain raised on any farm exceeds that of any other crop and constitutes at least 40 per cent of the total value of products not fed to live stock, the farm is classified as a "hay and grain farm." Similarly, if vegetables are the leading crop, constituting 40 per cent of the gross farm income, it is a "vegetable" farm. The farms of the other groups are classified in accordance with the same general principle. "Miscellaneous" farms are those whose operators do not derive 40 per cent of their farm income from any one class of products. Farms which yielded no income in 1899 are classified according to the agricultural operations upon other farms in the same locality.

TABLE 10.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME, WITH PERCENTAGES.

PRINCIPAL SOURCE OF INCOME.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	2,134	1,174.7	2,565,647	100.0	$28,673,835	100.0
Hay and grain	642	472.3	303,216	11.8	6,050,835	21.1
Vegetables	132	282.1	30,633	1.2	589,849	2.1
Fruits	18	122.6	2,207	0.1	88,396	0.3
Live stock	986	2,159.3	2,085,837	81.3	19,312,047	67.3
Dairy produce	228	429.0	97,817	3.8	1,795,862	6.3
Miscellaneous	198	232.0	45,937	1.8	837,846	2.9

TABLE 11.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY PRINCIPAL SOURCE OF INCOME.

PRINCIPAL SOURCE OF INCOME.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$6,079	$1,071	$407	$5,572	$2,374	18.1
Hay and grain	6,416	1,216	523	1,269	1,214	19.3
Vegetables	2,888	606	203	772	1,399	31.3
Fruits	3,269	692	165	685	863	17.6
Live stock	7,422	1,097	408	11,065	3,522	17.6
Dairy produce	4,692	1,275	372	1,538	1,114	14.1
Miscellaneous	2,399	589	222	1,019	830	19.6

For the several classes of farms, the average values per acre of products not fed to live stock are as follows: Farms whose operators derive their principal income from fruits, $7.04; vegetables, $6.03; hay and grain, $3.84; miscellaneous products, $3.58; dairy produce, $2.60; and live stock, $1.63. In computing these averages the total area of the farms of each group is used and not the acreage devoted to the crop from which the principal income is derived.

The variations shown in the averages and percentages of gross income are largely due to the fact that in computing gross income no deductions are made for expenditures. For fruit and vegetable farms the average expenditure for labor represents a far larger percentage of the gross income than in the case of "hay and grain," "live-stock," or "miscellaneous" farms. If it were possible to present the average net incomes, the variations would be comparatively slight.

FARMS CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

Tables 12 and 13 present data relating to farms classified by reported value of products not fed to live stock.

TABLE 12.—NUMBER AND ACREAGE OF FARMS, AND VALUE OF FARM PROPERTY, JUNE 1, 1900, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK, WITH PERCENTAGES.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	Number of farms.	NUMBER OF ACRES IN FARMS.			VALUE OF FARM PROPERTY.	
		Average.	Total.	Per cent.	Total.	Per cent.
The State	2,184	1,174.7	2,565,647	100.0	$28,673,835	100.0
$0	95	268.9	24,600	1.0	425,850	1.5
$1 to $49	91	68.2	6,207	0.2	118,740	0.4
$50 to $99	80	252.4	20,190	0.8	116,160	0.4
$100 to $249	203	792.3	160,844	6.3	550,660	1.9
$250 to $499	293	314.3	98,675	3.7	1,112,670	3.9
$500 to $999	372	410.1	152,571	5.9	2,876,840	10.0
$1,000 to $2,499	577	486.5	280,713	10.9	5,070,170	17.7
$2,500 and over	463	3,908.5	1,826,847	71.2	18,402,745	64.2

TABLE 13.—AVERAGE VALUES OF SPECIFIED CLASSES OF FARM PROPERTY, AND AVERAGE GROSS INCOME PER FARM, WITH PER CENT OF GROSS INCOME ON TOTAL INVESTMENT IN FARM PROPERTY, CLASSIFIED BY REPORTED VALUE OF PRODUCTS NOT FED TO LIVE STOCK.

VALUE OF PRODUCTS NOT FED TO LIVE STOCK.	AVERAGE VALUES PER FARM OF—					Per cent of gross income on total investment in farm property.
	Farm property, June 1, 1900.				Gross income (products of 1899 not fed to live stock).	
	Land and improvements (except buildings).	Buildings.	Implements and machinery.	Live stock.		
The State	$6,079	$1,071	$407	$5,572	$2,374	18.1
$0	1,102	254	105	3,022		
$1 to $49	638	150	62	455	74	5.7
$50 to $99	818	171	94	369	88	6.1
$100 to $249	1,050	312	121	1,230	175	6.5
$250 to $499	1,654	511	161	1,408	358	9.6
$500 to $999	3,311	822	273	3,327	781	10.1
$1,000 to $2,499	4,489	1,080	409	2,809	1,599	18.2
$2,500 and over	18,204	2,445	973	17,700	8,153	20.7

Many of the farms reporting no income for 1899 were homesteads taken up too late for cultivation during that year. Some were stock farms operated by Indians who reported large numbers of horses, but no sales in 1899. There were some farms, also, from which no reports of the products of 1899 could be secured, as the persons in charge, June 1, 1900, did not operate the farms in 1899, and could give no information concerning the products of that year. To this extent the reports fall short of giving the total value of the farm products of 1899.

LIVE STOCK.

At the request of the various live-stock associations of the country, a new classification of domestic animals was adopted for the census of 1900. The age grouping for neat cattle was determined by their present and prospective relations to the dairy industry and the supply of meat products. Horses and mules are classified by age, and neat cattle and sheep by age and sex. The new classification permits a very close comparison with the figures published in previous census reports.

Table 14 presents a summary of live-stock statistics.

TABLE 14.—DOMESTIC ANIMALS, FOWLS, AND BEES, ON FARMS AND RANGES, JUNE 1, 1900, WITH TOTAL AND AVERAGE VALUES, AND NUMBER OF DOMESTIC ANIMALS NOT ON FARMS OR RANGES.

LIVE STOCK.	Age in years.	ON FARMS AND RANGES.			NOT ON FARMS OR RANGES.
		Number.	Value.	Average value.	Number.
Calves	Under 1	81,051	$851,851	$10.51	196
Steers	1 and under 2	41,108	796,399	19.38	52
Steers	2 and under 3	29,508	804,642	27.27	88
Steers	3 and over	12,863	431,342	33.53	20
Bulls	1 and over	8,696	384,406	44.20	10
Heifers	1 and under 2	44,967	792,272	17.62	48
Cows kept for milk	2 and over	13,606	462,681	34.01	572
Cows and heifers not kept for milk.	2 and over	153,888	3,749,667	24.45	126
Colts	Under 1	10,778	56,296	5.22	72
Horses	1 and under 2	11,001	102,188	9.29	84
Horses	2 and over	58,516	1,113,852	19.03	3,146
Mule colts	Under 1	607	8,716	14.36	
Mules	1 and under 2	440	9,169	20.84	
Mules	2 and over	1,745	67,716	38.81	310
Asses and burros	All ages	256	28,886	112.84	41
Lambs	Under 1	318,788	578,919	1.82	18
Sheep (ewes)	1 and over	434,574	1,300,152	2.99	17
Sheep (rams and wethers).	1 and over	133,677	465,794	3.48	36
Swine	All ages	15,174	75,712	4.99	491
Goats	All ages	4,633	12,948	2.79	19
Fowls:[1]					
Chickens[2]		100,661			
Turkeys		8,618	55,826		
Geese		880			
Ducks		2,379			
Bees (swarms of)		5,692	20,131	3.54	
Value of all livestock			12,169,565		

[1] The number reported is of fowls over 3 months old. The value is of all, old and young.
[2] Including Guinea fowls.

The total value of live stock on farms and ranges, June 1, 1900, was $12,169,565, of which 68.0 per cent represents the value of neat cattle; 19.3 per cent, that of sheep; 10.4 per cent, that of horses; and 2.3 per cent, that of all other live stock.

No reports were secured of the value of live stock not on farms and ranges, but it is probable that such animals have higher average values than farm or range animals. Allowing the same averages, however, the total value of all live stock not on farms and ranges, exclusive of poultry and bees, is approximately $110,000.

CHANGES IN LIVE STOCK KEPT ON FARMS AND RANGES.

The following table shows the changes since 1860 in the number of the most important domestic animals.

TABLE 15.—NUMBER OF SPECIFIED DOMESTIC ANIMALS ON FARMS AND RANGES: 1860 TO 1900.

YEAR.	Dairy cows.	Other neat cattle.	Horses.	Mules and asses.	Sheep.[1]	Swine.
1900	13,606	371,586	80,295	3,043	568,251	15,174
1890	9,273	201,627	56,788	1,723	273,469	7,373
1880	13,819	158,902	32,087	1,268	133,695	9,080
1870	6,174	25,342	7,620	990	11,018	3,295
1860	947	4,524	541	134	376	3,571

[1] Lambs not included.

A marked increase between 1890 and 1900 is shown for all classes of live stock, the numbers of sheep and swine having more than doubled. With the exception of a decrease in the number of dairy cows in the decade from 1880 to 1890, and fluctuations in the number of swine, the increases have been constant and rapid since 1860.

In comparing the poultry report of 1900 (see Table 14) with that of the Eleventh Census, it should be borne in mind that in 1900 the enumerators were instructed not to report fowls less than 3 months old, while in 1890 no such restriction was made. This explains, to a great extent, the apparent decreases in the numbers of turkeys and ducks of 13.7 per cent and 12.5 per cent, respectively. Notwithstanding the limitation above mentioned, an increase of 67.6 per cent in the number of geese, and of 61.9 per cent in the number of chickens, is shown.

ANIMAL PRODUCTS.

Table 16 is a summarized statement of the products of the animal industry.

TABLE 16.—QUANTITIES AND VALUES OF SPECIFIED ANIMAL PRODUCTS, AND VALUES OF POULTRY RAISED, ANIMALS SOLD, AND ANIMALS SLAUGHTERED ON FARMS, IN 1899.

PRODUCTS.	Unit of measure.	Quantity.	Value.
Wool	Pounds	4,842,500	$692,403
Mohair and goat hair	Pounds	10,590	3,672
Milk	Gallons	[1] 4,446,071	[2] 433,391
Butter	Pounds	569,523	
Cheese	Pounds	94,082	
Eggs	Dozens	589,490	122,522
Poultry			71,175
Honey	Pounds	178,650	17,156
Wax	Pounds	8,380	
Animals sold			2,260,221
Animals slaughtered			270,228
Total			3,870,768

[1] Comprises all milk produced, whether sold, consumed, or made into butter or cheese.
[2] Comprises the value of milk sold or consumed, and of butter and cheese made.

The value of animal products in 1899 was $3,870,768, or 57.3 per cent of the value of all farm products and 74.7 per cent of the gross farm income. Of the total value given, 65.4 per cent represents the value of animals sold and animals slaughtered on farms; 18.0 per cent, that of wool and mohair; 11.2 per cent, that of dairy products; 5.0 per cent, that of poultry and eggs; and 0.4 per cent, that of honey and wax.

ANIMALS SOLD AND ANIMALS SLAUGHTERED ON FARMS.

In 1899, 1,160 farmers received $2,260,221 from the sale of live animals, an average of $1,948 per farm reporting. On 1,172 farms animals were slaughtered for food, their value being $270,228, an average of $231 per farm. The value of animals sold and animals slaughtered on farms comprised 48.8 per cent of the gross farm income for all farms, and represents the most important branch of stock raising and the leading agricultural industry of the state. In obtaining reports of receipts from sales of live animals, the enumerators were instructed to secure from each farm operator a statement of the amount received from sales in 1899, less the amount paid for animals purchased during the same year.

WOOL AND MOHAIR.

The rapid development of the wool-growing industry in Nevada is shown by the following statistics. In 1859, 330 pounds of wool were grown; in 1869, 27,029 pounds; in 1879, 655,012 pounds; in 1889, 1,450,868 pounds; and in 1899, 4,842,500 pounds. The average weight of fleeces was 4.9 pounds in 1879, 5.9 pounds in 1889, and 7.8 pounds in 1899, indicating an improvement in the grade of sheep kept.

The wool grown in 1899 was reported by 199 farmers, and was worth $692,403, an average of $3,479 per farm. The three counties of Elko, Humboldt, and Washoe reported 66.0 per cent of the entire product.

DAIRY PRODUCE.

The production of milk increased 1,914,019 gallons, or 75.6 per cent, from 1889 to 1899; that of butter, 79,866 pounds, or 16.3 per cent; and that of cheese, 42,875 pounds, or 83.7 per cent. Of the 94,082 pounds of cheese reported for 1899, 78,156, or 83.1 per cent, were reported by 4 farms in Douglas county.

Of the $433,391 given in Table 16 as the value of all dairy products in 1899, $164,012, or 37.8 per cent, represents the value of such products consumed on farms, and $269,379, or 62.2 per cent, the amount realized from sales. Of the latter amount, $187,962 was derived from the sale of 1,353,062 gallons of milk; $71,707, from 328,937 pounds of butter; $8,862, from 88,227 pounds of cheese; and $848, from 673 gallons of cream.

POULTRY AND EGGS.

The total value of the products of the poultry industry in 1899 was $193,697, of which amount 36.7 per cent represents the value of fowls raised and 63.3 per cent the value of eggs produced. Nearly 418,765 dozen more eggs were produced in 1899 than in 1889, the rate of increase being about 245.3 per cent.

HONEY AND WAX.

The quantity of honey produced in 1899 was 178,650 pounds, a gain of 90,093 pounds, or 101.7 per cent, over the production of 1889. The quantity of wax produced increased 19.6 per cent.

HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS.

Table 17 presents, for the leading groups of farms, the number of farms reporting horses and dairy cows, the total number of these animals, and the average number per farm. In computing the averages presented, only those farms which report the kind of stock under consideration are included.

TABLE 17.—HORSES AND DAIRY COWS ON SPECIFIED CLASSES OF FARMS, JUNE 1, 1900.

CLASSES.	HORSES.			DAIRY COWS.		
	Farms reporting.	Number.	Average per farm.	Farms reporting.	Number.	Average per farm.
Total	2,082	80,295	38.6	1,684	13,606	8.1
White farmers	1,918	77,899	40.6	1,674	13,541	8.1
Colored farmers	164	2,396	14.6	10	65	6.5
Owners[1]	1,724	57,225	33.2	1,404	11,156	7.9
Managers	118	16,665	141.2	90	962	10.7
Cash tenants	156	4,743	30.4	122	1,045	8.6
Share tenants	84	1,662	19.8	68	443	6.5
Under 20 acres	192	2,386	12.4	90	341	3.8
20 to 99 acres	429	4,094	9.5	307	1,440	4.7
100 to 174 acres	386	8,006	20.7	316	2,506	7.9
175 to 259 acres	171	3,588	21.0	151	1,325	8.8
260 acres and over	904	62,221	68.8	820	7,994	9.7
Hay and grain	609	10,282	16.8	469	2,709	5.8
Vegetable	127	1,811	14.3	78	360	4.6
Fruit	12	117	9.8	9	26	2.9
Live stock	929	62,083	66.8	770	6,606	8.6
Dairy	219	3,039	13.9	228	3,122	13.7
Miscellaneous	186	3,013	16.2	130	783	6.0

[1] Including "part owners" and "owners and tenants."

The high average number of horses shown for farms operated by managers, is due to the fact that many of the largest stock farms are included in that group. Few of the colored farmers, who are almost all Indians, report any dairy cows, but practically all report horses.

CROPS.

The following table gives the statistics of the principal crops in 1899.

TABLE 18.—ACREAGES, QUANTITIES, AND VALUES OF THE PRINCIPAL FARM CROPS IN 1899.

CROPS.	Acres.	Unit of measure.	Quantity.	Value.
Corn	580	Bushels	14,614	$11,736
Wheat	18,537	Bushels	450,812	263,351
Oats	4,786	Bushels	151,176	67,160
Barley	7,043	Bushels	224,035	126,748
Rye	129	Bushels	1,929	1,548
Clover seed		Bushels	157	988
Hay and forage	292,134	Tons	419,812	2,066,496
Hops	(1)	Pounds	100	10
Dry beans	33	Bushels	536	1,303
Dry peas	4	Bushels	85	92
Potatoes	2,235	Bushels	361,188	194,619
Sweet potatoes	5	Bushels	923	1,057
Onions	105	Bushels	30,535	24,945
Sugar beets	2	Tons	2	10
Miscellaneous vegetables	819			73,836
Sorghum sirup	[2]30	Gallons	1,465	733
Small fruits	53			8,786
Grapes	[3]112	Centals.	2,876	[4]5,856
Orchard fruits	[3]1,791	Bushels	15,287	[5]10,433
Tropical fruits	[3]29	Pounds	15,270	323
Nuts				140
Forest products				26,150
Flowers and plants	(1)			25
Nursery products	5			65
Cotton	26	Pounds	9,000	1,179
Miscellaneous				30
Total	328,458			2,887,569

[1] Less than 1 acre.
[2] Acreage of sorghum cane.
[3] Estimated from number of vines or trees.
[4] Including value of raisins, wine, etc.
[5] Including value of cider and vinegar.

Of the total value of crops in 1899, hay and forage contributed 71.6 per cent; cereals, 16.3 per cent; vegetables, including potatoes, sweet potatoes, and onions, 10.2 per cent; fruits and nuts, 0.9 per cent; and all other products, 1.0 per cent.

The average values per acre of the various crops were as follows: Onions, $237.57; small fruits, $165.77; miscellaneous vegetables, $90.15; potatoes, $87.08; cereals, $15.14; and orchard fruits, $5.83.

CEREALS.

The following table is a statement of the changes in cereal production since 1859.

TABLE 19.—ACREAGE AND PRODUCTION OF CEREALS: 1859 TO 1899.

PART 1.—ACREAGE.

YEAR.[1]	Barley.	Buckwheat.	Corn.	Oats.	Rye.	Wheat.
1899	7,043	----------	580	4,786	129	18,537
1889	8,081	----------	274	3,490	54	3,631
1879	19,399	----------	487	5,937	----------	3,674

[1] No statistics of acreage were secured prior to 1879.

PART 2.—BUSHELS PRODUCED.

1899	224,035	----------	14,614	151,176	1,929	450,812
1889	237,192	----------	6,540	99,126	502	81,486
1879	513,470	----------	12,891	186,860	----------	69,298
1869	295,452	985	9,660	55,916	310	228,866
1859	1,597	----------	460	1,082	98	3,631

The total area devoted to cereals in 1899 was 31,075 acres; in 1889, 15,530 acres; and in 1879, 29,497 acres. The fact that the year 1889 was especially unfavorable to cereals accounts in part for the large decreases during the decade, 1879 to 1889, and also for the large increases shown for the last decade.

In the last twenty years there has been a general rearrangement in the relative rank of the various grains. In 1879 and 1889 barley led in both acreage and production, while in 1899 the land devoted to wheat constituted nearly sixty per cent of the total acreage in cereals.

Over one-half the wheat harvested in the state in 1899 was grown in Humboldt county. In this county, 10,435 acres were devoted to cereals, with a production valued at $142,159. Over half the barley grown in the state in 1899 was produced in Douglas and Humboldt counties; while Elko and Douglas yielded almost three-fourths of the oats. Most of the rye was grown in White Pine county, and nearly all the corn in Lincoln and Nye counties. The acreage given in Table 19 as the area devoted to corn in 1899, is exclusive of 136 acres of corn, nonsaccharine sorghum, and similar crops grown for forage or ensilage.

HAY AND FORAGE.

Hay and forage occupied 88.9 per cent of the land devoted to crops, and yielded 71.6 per cent of the total value of crops. The average yield was 1.4 tons per acre, and the average values $4.92 per ton and $7.07 per acre.

To the total area and production of hay and forage, given in Table 18, wild, salt, or prairie grasses contributed 165,059 acres and 159,400 tons, 38.0 per cent of the total production and an average of nearly 1 ton per acre of the area devoted to these species of grasses. Alfalfa or lucern contributed 96,725 acres and 224,331 tons; 53.4 per cent of the total and an average of 2.3 tons per acre, and other hay and forage crops, 30,350 acres and 36,081 tons.

ORCHARD FRUITS.

The changes in orchard fruits since 1890 are shown in the following table.

TABLE 20.—ORCHARD TREES AND FRUITS: 1890 AND 1900.

FRUITS.	NUMBER OF TREES.		BUSHELS OF FRUIT.	
	1900.	1890.	1899.	1889.
Apples	83,393	27,167	10,760	30,083
Apricots	1,121	279	280	76
Cherries	2,212	828	114	78
Peaches	9,136	3,993	2,562	1,423
Pears	6,214	748	903	811
Plums and prunes	14,358	1,025	542	670

The total number of fruit trees in the state more than trebled in the last decade, increasing from 33,543 to 117,104. Although the increase was general in all classes, the greater part was contributed by apple trees, which constituted 71.6 per cent of all orchard trees in 1900 and furnished 67.3 per cent of the total gain since 1890. The largest relative gain, however, was that in the number of plum and prune trees, the proportion of which increased from less than 3 per cent of all orchard trees in 1890 to about 12 per cent in 1900, the absolute number being more than fourteen times as great in the latter as in the former year.

Of the total number of classified trees in 1900, 71.6 per cent were apple trees; 12.3 per cent, plum and prune; 7.9 per cent, peach; 5.3 per cent, pear; 1.9 per cent, cherry; and 1.0 per cent, apricot.

The value of orchard products, including the value of 6,580 pounds of dried and evaporated fruits, amounted in 1899 to $10,433, of which Lincoln county contributed more than one-third. The greatest numbers of orchard trees were reported from Washoe and Lyon counties, and the largest production of fruit from Humboldt.

In addition to the trees given in Table 20, 670 unclassified fruit trees were reported with a yield of 125 bushels of fruit.

VEGETABLES.

The total area devoted to vegetables, including potatoes, sweet potatoes, and onions, in 1899 was 3,164 acres. Of this, 70.8 per cent was used in the cultivation of potatoes, which were raised by nearly one-half the farmers in the state, Lyon and Washoe counties reporting 40.5 per cent of the acreage and 55.4 per cent of the total yield.

Of the 819 acres used in the cultivation of miscellaneous vegetables, the products of 610 acres were not reported in detail. The remaining 209 acres were devoted to vegetables as follows: 75, to cabbages; 36, to sweet corn; 26, to tomatoes; 15, to watermelons; 11, to carrots; and 46, to other vegetables.

SMALL FRUITS.

The total area used in the cultivation of small fruits in 1899 by the 150 farmers reporting them was 53 acres, an average of nearly 0.4 of an acre per farm. The acreage and production of the several varieties of berries were as follows: Currants, 16 acres and 25,670 quarts; strawberries, 14 acres and 16,440 quarts; gooseberries, 8 acres and 13,690 quarts; raspberries and Logan berries, 7 acres and 11,220 quarts; blackberries and dewberries, 4 acres and 5,410 quarts; and other berries, 4 acres and 4,430 quarts.

LABOR.

The total expenditure for labor on farms in 1899, including the value of board furnished, was $1,386,650, an average of $635 per farm. The average was $875 for live-stock farms, $561 for hay and grain farms, $386 for vegetable farms, $318 for dairy farms, and $116 for fruit farms. "Managers" expended on an average $3,410; "owners," $437; "cash tenants," $372; and "share tenants," $302. White farmers expended $686 per farm, and colored farmers, $41.

INDIAN RESERVATIONS.

The Indian tribes of Nevada are the Paiute,[1] Western Shoshone, and a few scattering bands of other tribes, all of Shoshonean stock. They live for the most part on three reservations, Pyramid Lake, Walker River, and Duck Valley; the Paiute, on the first two, and the Western Shoshone, on the last.

None of these tribes tilled the soil before they were instructed by the Government, although other Shoshonean tribes of the Southwest had a knowledge of agriculture previous to the coming of the white settler. The Indians are quiet, industrious, and willing workers. They carry on agriculture and stock raising, especially for neighboring ranch men, and are proficient in most varieties of farm labor, but some are still dependent upon Government rations.

DUCK VALLEY RESERVATION.

Duck Valley reservation, embracing an area of 488 square miles, is situated in the extreme northern part of Nevada, in Elko county, and extends into Idaho. The larger part of the area is mountain land naturally adapted to grazing, being well watered and covered with nutritious grasses. Duck Valley proper, watered by the Owyhee River, comprises about one-fourth of the entire area of the reservation and has 40,000 acres of arable land, if it could be irrigated. On account of the altitude (6,000 feet), and the short, uncertain seasons and insufficient water, agriculture is attended with only partial success. Frosts sometimes occur in June and August.

The tribes on this reservation are the Paiute and Shoshone, numbering in all 439. As stock men and haymakers, they are very proficient, and are also in great demand as sheep shearers. A few carry on agriculture and stock raising for themselves. Government rations, which constitute about 30 per cent of their subsistence, are issued regularly, in limited quantities to all Indians, and are being grad-

[1] Also known as Paviotso.

ually decreased until the tribes shall have become self-supporting.

The water supply for irrigation is very unreliable. The streams, which depend upon the amount of snow deposited on the neighboring mountains, are swollen beyond their banks in the springtime, but are very low during the irrigation period. With the amount of water now on hand, less than 5,000 acres can be cultivated.

Alfalfa, which yields two crops each year, and wild hay are raised most extensively in Duck Valley, and barley and wheat constitute the crop of cereals. Wheat, sown in the fall, matures in July and seldom requires irrigation more than once or twice a year.

The Indians, as yet, have given but little attention to stock raising. Indian ponies constitute their wealth and a few own large herds. An attempt is being made to sell the ponies and buy cattle instead in order to give the Indians a start in stock raising, which must eventually furnish their means of subsistence. The hay lands produce a crop sufficient to maintain several thousand head of cattle.

PYRAMID LAKE RESERVATION.

Pyramid Lake reservation, situated in the extreme western part of Nevada, in Washoe county, contains an area of 503¼ square miles. The larger part is taken up by Pyramid Lake, which gives its name to the reservation. The lake extends 38.12 miles in its extreme length and averages 12 miles in width. The land is arid and a large part is mountainous, less than 20,000 acres being available for agriculture. The soil is alkaline but produces well with plenty of water. The mountainous portion is naturally adapted to stock raising, being well watered by melting snow, and would furnish good feed for cattle and sheep.

The reservation is inhabited by the Paiute, of Shoshonean stock, numbering 705. They take kindly to farming and stock raising and are practically self-supporting, Government rations constituting but 5.0 per cent of their subsistence. Many find employment on ranches and cattle ranges of neighboring white men who are dependent upon them for labor.

The irrigation facilities are wholly inadequate to the needs of these Indians and are also very unreliable, not more than one-third of the available land being watered. The uncertainty of the water supply and consequent failure of crops has so discouraged them that they prefer to work for white farmers rather than to cultivate their own land. Efforts are being put forth to improve and extend the present system; and the contemplated improvements, when completed, will bring an additional 3,000 acres under cultivation, and should place the band on a self-supporting agricultural basis.

Barley and alfalfa are the principal crops raised and clover and wild grasses are cured for hay. With plenty of water, alfalfa will yield two and even three crops each year. A few farmers raised a small quantity of potatoes but no other garden produce was reported. The number of acres cultivated by the Indian farmers varies from 2 to 27, being usually less than 10 acres. No allotments have been made, but the land is parceled out to those who will work it.

The Pyramid Lake Indians own little live stock. Indian ponies constitute their chief possession; a few, however, have horses of a somewhat better grade.

WALKER RIVER RESERVATION.

Walker River reservation lies in the west central part of Nevada, in Esmeralda county, a portion extending into Lyon and Churchill counties. It embraces an area of 498¼ square miles, of which 176 is occupied by Walker Lake, 22 miles long and 8 miles wide. Of the land area, two-thirds is arid, rough mountain and timber land, but the remainder is suitable for agriculture or grazing. The reservation is traversed for 22 miles by Walker River and the land upon its borders is rich and easily irrigated. Bench land, although not so fertile as the river bottoms, produces fairly well when irrigated, while mesa and mountain lands afford ample feed for stock.

The Indians at Walker River are the Paiute, numbering 392. Like the band at Pyramid Lake they are industrious and slowly progressing toward civilization. They make good farmers, stockmen, and general laborers and take more interest in working for white men than in farming for themselves. The irrigable land is insufficient to support them and they are also very much in need of agricultural implements, two great drawbacks to their progress. The methods employed in farming, with the exception of haymaking, are very primitive, due more to a lack of implements than to ignorance of methods.

Alfalfa is the principal crop and, when well irrigated, three cuttings can be made each year; wheat and barley are also grown. Individual Indians cultivate as high as 50 acres, but the majority, less than 20. Their sowing is so arranged that the harvest will not interfere with their obtaining employment during the harvest season of their white neighbors. The agricultural land is not allotted, but is parceled out to those who show a desire to cultivate it.

Some interest is taken in stock raising. The horses are pony stock, and many Indians still seem to think that the pony is a necessity to their welfare. These ponies are a detriment to the range, trampling out the grass, and are also a useless expense, as in the winter months they consume hay which should be fed to marketable stock. On account of the natural facilities for stock raising and the precarious conditions attending tillage of the soil, more attention should be given to the former industry. The Indians take an interest in raising stock and will doubtless improve the character of their breeds.

IRRIGATION STATISTICS.

NATURAL FEATURES.

The state of Nevada is usually thought to include the driest and most desert-like part of the arid region. It lies within the western part of the Great Interior Basin, from which no rivers escape to the sea. On the west of the Great Basin, a short distance beyond the boundary of the state, is the high mountain range known as Sierra Nevada, which stands as a barrier against the rain-bearing winds from the west; on the east is the Wasatch range, which extends north and south across the state of Utah. Thus the state of Nevada lies in a broad depression between two great natural walls, and slopes gradually toward the south, the upper or northern portion of the basin having an average altitude of about 5,000 feet, and the lower or southern end descending below the sea level in places.

But the Great Basin is by no means a single broad valley or desert. On the contrary, it is broken by irregular mountain masses which rise abruptly from the nearly level plains. These plains are, for the most part, the bottoms of ancient lakes in which thick deposits of gravel, sand, and clay have accumulated, burying the bases of the mountains. There are two great systems of these ancient lakes, that on the east including what is left of Lake Bonneville, and that on the west, the ancient Lake La Hontan. The Great Salt Lake of Utah is the shrunken remnant of Bonneville, and Lakes Winnemucca, Pyramid, Humboldt, Carson, and Walker are depressions in the bottom of old Lake La Hontan.

Rivers which flow throughout the year may be regarded as exceptional in Nevada. Infrequent storms, striking the mountains, give rise to torrents which rush down the steep slopes, cut narrow canyons, and pile debris out on the desert into which the waters sink. Thus there are almost innumerable torrent and intermittent streams issuing from the small but lofty mountain ranges of the Great Basin. Some of these stream channels unite to form the principal river of the state, the Humboldt, which, by the vast extent of its drainage basin, and the number of these intermittent tributaries, succeeds in becoming a fairly persistent stream throughout its course. It crosses the northern part of the state and finally discharges an occasional flood into the depression known as Humboldt Lake. This depression is alternately a stretch of open water and an alkaline plain. When there is an unusually wet season, the lake overflows into what is known as Carson Sink, or vice versa when Carson River is at flood height.

The other important rivers of the state are the Truckee, Carson, and Walker, which receive a continual supply from the snow-capped peaks of the Sierra Nevadas. These mountains are located in the state of California, and the rivers rising in them cross the state line, and lose their waters in the broad, arid plains of the state, except in times of floods, when they reach the lakes or sinks which mark the lowest point of the drainage basin.

NEED OF IRRIGATION.

Owing to the enormous area of the state, and to its small and scattered supply of water, which is obtained largely from springs, the ranches or farms, except in the extreme western portion, are at considerable distances from each other and still further from the market. Transportation is expensive, and sufficient produce is not raised to supply local demands. Tilling the soil is of necessity an adjunct to stock raising. In the broad, arid valleys of the state, and among the rugged hills, wherever a spring occurs, some ranchman has bought or taken up 40 acres or more, sufficient to cover the source of the water. Owning this, he can practically control thousands of acres of grazing land. This state of affairs and the difficulty of transportation have combined not only to deter immigration, but to encourage emigration, thus leaving in the state practically only the mining population.

IRRIGATED DISTRICTS.

The principal irrigated areas are along the Humboldt River, and on the western edge of the state in the lowlands traversed by the three California rivers mentioned. At various points, also, near the mouths of canyons in the desert ranges, are ranches where small amounts of water from the intermittent streams have been used for irrigation.

The division of Nevada into drainage districts is comparatively simple if no attempt is made to define their outlines accurately. Except the portion in the immediate vicinity of the Humboldt River, the greater part of the state may be eliminated from consideration, as there is practically no surface drainage. Each small stream may be separately considered as receiving water from a particular mountain peak. It is therefore sufficient in the classification of the irrigated lands to consider the country along the Humboldt, and the area adjacent to the California state line, and to group all the miscellaneous irrigated areas of the state into a third class.

POSSIBLE EXTENSIONS OF IRRIGATION FACILITIES.

A greater agricultural development would be rendered possible by the construction of reservoirs along the Humboldt River and its tributaries, and also at the headwaters of the Truckee, Carson, and Walker rivers. As the last three rivers mentioned rise in California, interstate problems would be involved in the latter undertaking, but it is highly probable that the Government could build works to reclaim large areas of land, thus making possible homestead settlement on the lands now valueless. The reservoir site which has attracted the greatest amount of public attention is Lake Tahoe, at the head of Truckee River, where it has been shown that, by means of a suitable dam, water sufficient for the irrigation of thousands of acres could be retained. The drainage area tributary to the lake is, however, small compared to the surface of open water,

and like others of the arid region, it is possible that this lake is too large for the most economical storage.

In addition to the reservoir sites now occupied in part by well-known lakes, there are scattered throughout the mountains many localities adapted to the conservation of water. These are mainly valleys, in some cases formerly occupied by glaciers, and later by small lakes which in the course of time have cut an outlet through the lower rims. A comparatively small expenditure of labor and capital would close these outlets, and by this means bodies of water of considerable size could be held. As the rain and snow fall on the higher mountains aggregate annually from 30 to 40 inches or more, this would be sufficient to replenish such reservoirs.

Water from wells and springs has an exceptionally large value in Nevada on account of the general scarcity of surface waters. There are numerous springs which come out along the edges of valleys and among the foothills. Few attempts have been made to obtain artesian water, and a systematic study of the existing geological conditions is needed, as the drilling of deep wells so far has given little knowledge of the underground conditions, other than that water could not be had at the depths to which the particular wells have been drilled.

RESULTS OF IRRIGATION.

Of the 70,233,600 acres of land comprised in Nevada, only 2,565,647 acres, or 3.7 per cent, are included in farms, and only 572,946 acres, or 0.8 per cent of the total area of the state, are improved. Of the improved land, 570,608 acres are outside of the Indian reservations. In demonstration of the fact that agriculture is almost wholly dependent upon irrigation to produce crops, it should be noted that 504,168 acres, or 88.0 per cent of the total improved area, were irrigated in 1899. A careful study of agricultural development shows that the only progress in this direction has been that which followed the construction and extension of irrigation enterprises along water courses, and the building of reservoirs to store the flood waters heretofore wasted.

TABLE A.—ACREAGE AND PRODUCTION OF ALL CROPS, AND OF IRRIGATED CROPS IN 1899.

CROPS.	ACREAGE.			PRODUCTION.			
	Total.	Irrigated.	Per cent irrigated.	Unit of measure.	Total.	Irrigated.	Per cent irrigated.
The State	328,458	323,352	98.4				
Corn	580	580	100.0	Bushels	14,614	14,614	100.0
Wheat	18,537	18,246	98.4	Bushels	450,812	448,802	99.6
Oats	4,786	4,786	100.0	Bushels	151,176	151,176	100.0
Barley	7,043	6,982	99.1	Bushels	224,635	223,748	99.9
Rye	129	104	80.6	Bushels	1,929	1,880	97.5
Wild, salt, or prairie grasses	165,059	160,821	97.4	Tons	159,400	157,340	98.7
Millet and Hungarian grasses	84	84	100.0	Tons	132	132	100.0
Alfalfa or lucern	96,725	96,665	99.9	Tons	224,381	224,291	99.9
Clover	1,021	981	96.1	Tons	1,324	1,309	98.9
Other tame and cultivated grasses	26,957	26,587	98.6	Tons	30,778	30,543	99.2
Grains cut green for hay	2,152	2,140	99.4	Tons	3,703	3,692	99.7
Forage crops	136	136	100.0	Tons	144	144	100.0
Potatoes	2,235	2,231	99.8	Bushels	361,188	361,035	99.9
Onions	105	105	100.0	Bushels	30,535	30,535	100.0
Miscellaneous vegetables[1]	824	824	100.0				
Grapes	[2]112	[2]112	100.0	Centals	2,876	2,876	100.0
Orchard fruits	[2]1,791	[2]1,791	100.0	Bushels	15,287	15,287	100.0
Other crops	182	177	97.3				

[1] Including sweet potatoes.

[2] Estimated from number of vines or trees.

The total number of acres of irrigated crops as given above is 323,352, while the total number of acres of land irrigated is 504,168. The difference, 180,816 acres, represents approximately the area of pasture land irrigated. Nearly 5,000 acres of hay are reported as grown without irrigation, but it is probable that a large portion of this area was really irrigated by flooding at least once in the year.

TABLE B.—NUMBER, LENGTH, AND COST OF CONSTRUCTION OF MAIN CANALS AND DITCHES, WITH ACREAGE UNDER DITCH, AND ACREAGE IRRIGATED FROM STREAMS, IN 1899.

COUNTIES.	MAIN CANALS AND DITCHES.			NUMBER OF ACRES.		Average area irrigated per mile of ditch, in acres.
	Number.	Length in miles.	Cost of construction.	Under ditch.	Irrigated from streams.	
The State[1]	1,498	2,859	$1,533,927	747,930	504,034	176
Churchill	31	135	40,791	39,110	29,528	219
Douglas	109	190	43,713	33,764	25,857	136
Elko	398	669	249,460	240,573	156,444	284
Esmeralda	43	44	22,916	11,202	6,181	140
Eureka	67	117	69,115	35,148	21,828	197
Humboldt	237	455	466,334	175,336	124,925	275
Lander	117	261	43,595	30,610	18,787	72
Lincoln	72	83	32,814	18,867	9,961	120
Lyon	43	199	146,273	61,510	32,422	163
Nye	93	193	48,750	22,739	12,666	66
Ormsby	26	25	8,650	1,735	1,514	61
Storey	18	33	7,400	950	671	20
Washoe	72	279	292,400	49,950	43,884	157
White Pine	172	182	61,716	31,396	19,366	106

[1] Exclusive of Indian reservations.

The total amount invested in ditches in Nevada, June 1, 1900, was approximately $1,533,927. The total value of the irrigated products of 1899 was $2,853,149. No reports were secured concerning the cost of irrigation ditches in the Indian reservations. The number of acres of irrigated land for each mile of ditch reported is 176, as compared with 124 in Arizona. The number of acres under ditch for each mile is 262; in Arizona it is 592. The average cost of construction was about $536.53 per mile, $2.05 per acre of land under ditch, and $3.04 for land actually irrigated in 1899. The exceedingly low cost of ditch construction is due to the conservative manner in which the irrigation systems have been constructed and their comparatively simple character, as well as to the few failures which have followed the attempts to reclaim areas of arid land. The ditches, as a rule, have been wisely planned and economically constructed and the cost of maintenance per irrigated acre did not average 18 cents.

TABLE C.—NUMBER OF IRRIGATORS AND ACRES IRRIGATED IN 1889 AND 1899, WITH PERCENTAGES OF INCREASE, BY COUNTIES.

COUNTIES.	NUMBER OF IRRIGATORS.			NUMBER OF ACRES IRRIGATED.		
	1899.	1889.	Per cent of increase.	1899.	1889.	Per cent of increase.
The State[1]	1,906	1,167	63.3	[2]504,168	224,403	124.7
Churchill	71	43	65.1	29,533	9,688	204.8
Douglas	116	26	346.2	25,861	4,250	508.5
Elko	364	250	45.6	156,446	56,205	177.9
Esmeralda	35	29	20.7	6,181	4,527	36.5
Eureka	57	38	50.0	21,831	6,344	244.1
Humboldt	230	116	98.3	124,959	56,680	120.5
Lander	68	52	30.8	18,803	7,857	139.3
Lincoln	203	95	113.7	9,962	4,400	126.4
Lyon	161	87	85.1	32,422	17,777	82.4
Nye	80	82	[3]2.4	12,666	8,366	51.4
Ormsby	39	26	50.0	1,563	1,497	4.4
Storey	21	1	2,000.0	690	120	475.0
Washoe	319	221	44.6	43,885	28,631	53.3
White Pine	148	101	46.5	19,366	17,961	7.8

[1] Exclusive of Indian reservations.
[2] Irrigated from streams, 504,034 acres; from wells, 134 acres.
[3] Decrease.

A glance at the percentages of Tables 1 and C discloses the intimate relation between the growth of irrigation and the general development of agriculture. The number of farms outside of Indian reservations increased in ten years 61.4 per cent; the number of irrigators, 63.3 per cent; and the irrigated area, 124.7 per cent.

TABLE D.—NUMBER OF IRRIGATED FARMS COMPARED WITH TOTAL NUMBER OF FARMS, AND IRRIGATED ACREAGE COMPARED WITH TOTAL IMPROVED ACREAGE: JUNE 1, 1900.

COUNTIES.	NUMBER OF FARMS.			NUMBER OF IMPROVED ACRES IN FARMS.		
	Total.	Irrigated.	Per cent irrigated.	Total.	Irrigated.	Per cent irrigated.
The State[1]	2,061	1,906	92.5	570,608	504,168	88.4
Churchill	77	71	92.2	30,188	29,533	97.8
Douglas	117	116	99.1	27,069	25,861	95.5
Elko	398	364	91.5	170,142	156,446	92.0
Esmeralda	37	35	94.6	6,610	6,181	93.5
Eureka	68	57	83.8	23,303	21,831	93.7
Humboldt	241	230	95.4	139,143	124,959	89.8
Lander	69	68	98.6	23,800	18,803	79.0
Lincoln	229	203	88.6	13,094	9,962	76.1
Lyon	168	161	95.8	33,958	32,422	95.5
Nye	90	80	88.9	16,143	12,666	78.5
Ormsby	50	39	78.0	2,357	1,563	66.3
Storey	23	21	91.3	710	690	97.2
Washoe	331	313	94.6	49,643	43,885	88.4
White Pine	163	148	90.8	34,448	19,366	56.2

[1] Exclusive of Indian reservations.

Table D gives certain statistics of irrigation by counties, exclusive of Indian reservations. Of the farms, 92.5 per cent is irrigated, while of the improved land, 88.4 per cent is irrigated. The average number of acres of improved land in each irrigated farm is nearly 300, of which 265 are irrigated.

TABLE E.—AVERAGE VALUE PER ACRE OF IRRIGATED AND UNIRRIGATED FARMS AND FARM LAND, AND AVERAGE COST PER ACRE OF WATER RIGHT AND OF ANNUAL MAINTENANCE.

COUNTIES.	AVERAGE VALUE PER ACRE.					AVERAGE COST.	
	Farms, exclusive of buildings.			Arable land.		Water right.	Annual maintenance.
	All.	Irrigated.	Unirrigated.	Irrigated.	Unirrigated.		
The State[1]	$5.17	$5.85	$1.87	$28.47	$2.50	$2.86	$0.18
Churchill	7.31	7.39	4.24	16.56	1.25	1.28	0.12
Douglas	13.38	13.52	6.79	45.20	7.50	1.68	0.60
Elko	3.53	3.56	2.05	14.65	1.25	1.55	0.13
Esmeralda	8.07	8.07	-------	26.60	1.25	3.70	0.09
Eureka	4.57	4.59	3.14	26.92	1.25	3.01	0.15
Humboldt	4.26	4.28	3.03	37.11	3.50	3.39	0.11
Lander	7.45	7.45	3.33	25.34	1.25	2.11	0.10
Lincoln	10.92	11.29	6.36	28.41	5.00	2.75	0.50
Lyon	9.21	9.24	2.84	25.11	1.25	3.95	0.28
Nye	6.20	6.40	1.60	20.47	1.25	3.54	0.18
Ormsby	15.47	17.18	11.60	58.87	5.00	4.75	0.35
Storey	23.83	24.58	5.00	80.00	2.50	2.15	0.40
Washoe	6.48	8.02	0.92	62.25	5.00	6.60	0.27
White Pine	4.91	5.36	2.20	15.85	1.25	3.03	0.35

[1] Exclusive of Indian reservations.

In the above table it will be noted that the average value per acre of land on unirrigated farms in several counties very nearly equals that on irrigated farms. This will be

understood when it is explained that this value does not represent that of the land alone, but includes a very valuable water right, either a spring, or the sole right to all the water in a mountain stream. Owning this water supply, the ranchman practically controls all the grazing land in a valley and a large area extending back into the mountains. This is public domain for which no rental is paid. It is the water which makes the land valuable, though no land is irrigated.

The average value of land under ditch not yet prepared for irrigation is $2.50 per acre, while that of good irrigated land is $28.47 per acre. The difference, $25.97, is the average value per acre added by irrigation.

Of the 2,184 farms in the state, including those in the Indian reservations, 2,026 are irrigated and 158 are unirrigated. The value of all land in the irrigated farms, not including buildings, is $13,033,210, and of the unirrigated, it is $242,410. The value of all buildings on irrigated farms is $2,289,190, and for the unirrigated, $50,900.

The irrigated farms are 92.8 per cent of the total number in the state. The corresponding percentage of the acres in irrigated farms to the total farm acreage of the state is 95.0 per cent; that of the value of land and improvements, exclusive of buildings, is 98.2 per cent; that of buildings, 97.8 per cent; that of implements and machinery, 97.6 per cent; that of live stock, 94.1 per cent; and of the total value of farm property, 96.4 per cent. The average size of all farms, exclusive of the holdings of Indians, is 1,242 acres; the average size of irrigated farms is 1,276 acres; and the average amount of irrigated land on each irrigated farm is 265 acres. In 1889 the average number of irrigated acres on each irrigated farm was 192. Outside of Indian reservations, the average value per acre of land, exclusive of buildings, for all farms is $5.17; for unirrigated farms, $1.87; for irrigated farms, $5.35. The average value of irrigated land per acre is $28.47, while that of the best irrigated land, suitable for growing alfalfa, is from $50 to $150. Irrigated fruit land is even more valuable.